Managing Walleye on the Winnebago System

This past summer was a challenging one for many walleye anglers on Lake Winnebago. The bite was light, walleye were harder to find, and bigger fish seemed to be non-existent. This combination of circumstances has led some anglers to call for walleye size limit restrictions and stocking in years of poor reproduction. Their concern is that "brood stock populations have reached extremely low levels in recent times." They go on to state that this is due to low water in prior years and "… the general lack of addressing this concern in a pro-active manner…has resulted in a substantial reduction in current brood stock numbers. The unprotected harvesting of sexually mature fish further aggravates the problem."

I'm not sure what kinds of data these anglers have looked at to conclude that a "substantial reduction in current brood stock numbers" has occurred. Without going into too much detail, I would like to offer some points in relation to this call for size limits and stocking, based on the 15+ years of data that we have collected annually on Winnebago system walleyes.

1) This past summer, the walleye population was made up of medium and small-sized fish. The reason for this is yearclass strength.

- The medium-sized fish are from the 1990-95 yearclasses. These are the fish in the 17 – 24 inch range.
- The smaller-sized walleye (13 – 16 inches) are from the 1996 – 98 yearclasses. This group is dominated by the huge 1996 yearclass, which was 7 times larger than the next largest yearclass in the last 15 years!
- The large, old walleye (25+ inches) that people remember from the early to mid 1990's are essentially gone. They were from yearclasses in the early 1980's, mostly the large 1982 one.
- There are very few fish of this size in the system now because these *would have been* the fish from the 1986 – 89 yearclasses. As we know, these were very poor yearclasses due to drought conditions.

2) Angling success on Lake Winnebago last year was difficult in part because of a high forage base in the system. Based on annual trawling from this past summer, young-of-year (YOY) counts showed the following:

- Highest trout perch (grounder) numbers that we've ever seen in 15 years. (trout perch are a main item in the walleyes diet).
- Emerald (Milwaukee) shiner numbers, both YOY and adult, were the highest ever recorded in 15 years.
- Gizzard shad numbers were the highest since 1991
- Sheepshead numbers were the highest since 1993
- Walleye don't readily strike out of aggression like bass, northern and musky. They strike when hungry.

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3) Another possible reason for the poor fishing on Lake Winnebago this past summer may be a by-product of this spring's low water level.

- Record-low flows on the upper Fox and Wolf rivers apparently forced walleye to travel much further upstream in search of flooded marshes. This was substantiated by angler-caught tag returns this past year that came from much further upstream than ever before, and came at later dates as well.
- Possibly because of slow current to carry them and the long distances traveled, it appears that walleye remained in the rivers and upriver lakes of Poygan, Winneconne and Butte des Morts much longer than usual. Angler reports attest to this. Fishing was GREAT on the Wolf and upper lakes all year - even above Shiocton on the Wolf, which is generally unheard of!
- Tournament anglers knew this as well. Virtually all the 300 boats in the Mercury Marine tournament were on the upriver lakes or in the rivers.
- High forage numbers throughout the system also meant that walleye were in no hurry to return to "the big lake". All their needs were being met upstream.

4) "Anglers taking too many fish" has been cited as one of the reasons for tough walleye fishing the past 2 years. Eight years of angler and tournament tag return data do not support this claim. Note that walleye populations can safely sustain a 28 – 30% exploitation rate. We can estimate this rate from tag returns. It is simply the number of tags returned divided by the number of fish tagged.

- Even if only one-fourth of anglers report tags, we've only exceeded this rate in 3 of the last 8 years, which does not warrant undue concern.
- We feel that the average annual exploitation rate for the Winnebago system is in the range of 20 – 25%, well within the acceptable range.
- Prompt reporting of tagged fish by anglers can only improve this estimate.
- If over-exploitation really is a problem, as I have heard, then the best biological solution is a reduced bag limit … something I have NOT heard.
- As for fishing during the spring run, creel survey data from 1989 – 92 showed that only about 20% of all walleye caught were pre-spawn. This percentage is probably even lower today because of better educated and more conservation-minded anglers fishing the run.

5) The 15-inch size limit was necessary in 1992 for several biological reasons.

- Walleye (and sauger) numbers began a dramatic decline beginning in the late 1980's, in part because nine strong yearclasses between 1970 and 1983 caused greatly elevated numbers of these predators which crashed the forage base. They literally ate themselves out of house and home.
- The drought years of 1986 – 89 resulted in poor recruitment of walleye, which subsequently resulted in a small population composed primarily of large, old walleye.
- The 1990 yearclass was the first good one since 1982, and it represented future spawners in a depressed population. They needed some protection to

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allow them to mature and spawn. Thus, the 15-inch limit was brought into effect in 1992.

6) The 15-inch size limit was also removed for biological reasons.

- By 1996, most of the females from the 1990 yearclass were 15 inches and larger. They were also mature and ready to begin spawning.
- In 1995, over 95% of the tournament –caught walleye 15 inches and larger were females from the 1990 and 1991 yearclasses.
- The same rule that had protected the 1990 females was now forcing anglers to harvest them in high numbers.
- At the same time there was a surplus of smaller males and immature females that could safely be harvested to allow more of the mature females to continue to grow and spawn. This is why the size limit was removed - to spread the harvest out among a wider range of sizes of fish from both sexes.

7) There are several problems with a proposed 16-inch minimum size limit at this time.

- Many of the females from the 1996 yearclass will be making their way up river to spawn for the first time this spring. A 16-inch size limit would focus all the harvest pressure on these fish, as well as those larger.
- The tens-of-thousands of smaller male walleye that represent a harvestable surplus would have to be thrown back!
- It would ensure the heavy cropping of first-year spawners, especially with a bag limit of 5 fish.
- A proposed 14 – 18 inch slot is slightly better, but would not be effective in increasing the number of large fish in the system without a reduced bag at the upper end. A slot limit may be an option for future consideration should our growth rates slow significantly.

8) Finally, there is also a proposal to stock Winnebago in years of poor spawning. This would be difficult and unnecessary for several reasons.

- Low water years are not "highly predictable" as some have suggested. Spring runoff from snowmelt only fills the rivers. It is timely spring rains that keep the water high and flowing over the marshes to ensure that eggs hatch and fry are carried downstream. Since rains are unpredictable, it would be necessary to set up hatcheries and take eggs every year in order to be prepared. This is a time consuming proposition that would divert effort away from other fisheries activities, and in most years would be unnecessary.
- Stable, naturally reproducing walleye populations are typically maintained by 2 – 3 average or better yearclasses in a 5-year period. Contrary to some talk, we have had only two poor yearclasses (1999 and 2000) on the Winnebago system in the last five years. During the decade of the 1990's we've had seven average-to-phenomenal yearclasses. That's more than double the usual. We are not in a crisis situation that requires "emergency orders" to be adopted, as some have suggested.

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- Even the most ambitious efforts could not possibly come anywhere near to stocking walleye fry at the recommended minimum levels.
- From a forage-base standpoint, it is quite possible that it is advantageous to not have good yearclasses every year. Small and medium-sized walleye feed heaviest on the various young-of-year forage species. Occasional poor walleye yearclasses gives the forage base a chance to rebound and pull off a yearclass of their own. In addition, adult walleye will eat their young in the absence of adequate forage.
- And finally, stocking draws attention away from habitat improvement work aimed at improving spawning success. This is our best "bang for the buck" - to have the habitat functional and in optimum condition to produce a well-balanced, naturally reproducing walleye population.

We do use stocking as a tool where appropriate. We are currently working with Walleyes for Tomorrow to revitilize a large marsh on the upper Fox river near the Princeton lock. Once the marsh is restored to function as a natural spawning area, fry from the upper Fox strain of walleye will be stocked in it for a period of five years to give the upper Fox a "shot in the arm." Poor spawning conditions on that river have prevailed for the last five or six years due to lack of timely spring rains in that watershed.

The DNR is also exploring the feasibility of stocking Winnebago-strain sauger fry into the lake. This is a cooperative project with Walleyes for Tomorrow and UW-Milwaukee. Sauger from Lake Winnebago would be captured, spawned, and then reared at the UW-Milwaukee Water Institute under optimal conditions. The fry would then be stocked back into Winnebago in an effort to begin rebuilding the depressed sauger population.

These are some short points on a complex subject. Next year, we plan on re-convening the Winnebago Walleye Workgroup to review where we are right now, see how it fits into the statewide walleye plan, and discuss the feasibility of any possible future changes in walleye management on the system.

Until then, remember that "Fishing, even when it's bad, is still better than work!"

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